

Urological Problems in the Aged

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DURING 1955, half the patients on the Urology Section at the Los Angeles County General Hospital were more than 60 years of age (Table 1). Only 21 per cent of patients on all services were above 60. The proportion of males who were older than 60 years and who had urological complaints was still higher—60 per cent as against 29 per cent above 60 years of age on all other services. Not so large a proportion of female patients over 60 had urological complaints—27 per cent on the Urology Service and 18 per cent on all services. There was a higher per cent of females over 60 both on the Internal Medicine and on General Surgery services—46 per cent and 30 per cent, respectively.

PROSTATIC DISEASE

The larger proportion of aged persons requiring treatment for urological complaints is due to the prevalence of prostatic disease in older men. Hesitancy in starting the urinary stream, lack of force, frequent urination and dribbling at the end of urination, when they occur in a man past 60 years of age, are usually due to benign prostatic hypertrophy. It is inadvisable, however, to arrive at this diagnosis without making a thorough examination to consider other possibilities. A few months ago a man 65 years of age came to the author's office complaining of the obstructive symptoms noted above. He had seen several physicians previously and had been told that prostatectomy was the only treatment that would help him. Examination revealed an obstruction to the passage of a catheter through the bulbous urethra, and a normal prostate by rectal palpation. The urethral stricture was dilated, the symptoms disappeared, and the patient enjoyed again the pleasure of a free urinary stream without the necessity of surgical operation.

Prostatic carcinoma, nephrosclerosis or diabetes causing nocturnal polyuria, neurogenic vesical dysfunction and sometimes even dehydration are other conditions which must be differentiated from benign enlargement of the prostate.

Palliative Treatment of Prostatic Disease

A positive diagnosis of prostatic hypertrophy does not always mean that prostatectomy is indicated. Seven years ago the author made a study of 310

• The preponderance of men over 60 years of age on the Urology Service at the Los Angeles County General Hospital is due to the prevalence of prostatic disease. Approximately two-thirds of patients with prostatic hypertrophy of Grade I or smaller size and who have less than 60 cc. of residual urine can be treated nonsurgically. Prostatic operation, when done expertly, is well tolerated by most aged patients. The end results are usually good except in those who have complicating central nervous system lesions. The approach chosen for removal of the prostate is determined by the training and experience of the surgeon.

Urinary obstruction due to carcinoma of the prostate can be relieved by hormonal treatment in most cases. Carcinoma of the bladder when discovered early can be controlled for many years by repeated transurethral resection and frequent observation; when discovered late, successful definitive treatment is rarely possible. Vesical dysfunction due to neurological and/or senile changes is best treated by use of an in-dwelling urethral catheter. Mild dysfunction may respond somewhat to medication and sphincter muscle exercise. Infections respond well to anti-infection drugs unless there is an organic urological lesion. Untoward reactions to drugs are more common in aged patients. Calculi, when they are found in the bladder, should be crushed and evacuated; when in the kidney, let alone unless symptoms are annoying. Renal tumors should be removed unless the patient is more than 80 years of age. Elderly patients tolerate urological operation well when it is done expertly.

patients upon whom a diagnosis of benign prostatic hypertrophy had been made and who did not have prostatic operation for a month or longer after the diagnosis was made.¹ In 41 per cent of them, prostatectomy was eventually performed (Table 2). In the group of patients who had residual urine of less than 60 cc., 30 per cent required operation later, whereas in those who had initially more than 60 cc. of residual urine, 62 per cent were operated upon later. A correlation was also made of the size of the prostate and need for eventual operation. Thirty-two per cent of patients with a Grade I or less enlargement had prostatectomy later, and 49 per cent of those with prostatic enlargement of greater than a Grade I required subsequent removal of the gland. Success of palliative treatment was associated with comparatively smaller amounts of residual urine and a smaller sized gland. Patients who have annoying obstructive symptoms, however,

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TABLE 1.—A Comparison of the Per Cent of Patients Over 60 Years of Age on Different Services at the Los Angeles County Hospital During 1955. (Patients Discharged, Including Deaths.)

	Male	Per Cent Female	All Patients
Urology	60	27	50
Internal medicine	50	46	48
General surgery	32	30	31
All services	29	18	21

TABLE 2.—Necessity for Eventual Prostatectomy in Patients with Prostatism Who Were Not Operated Upon for One Month or Longer After Diagnosis of Prostatic Hypertrophy.

Criteria Evaluated	Number of Patients	Per Cent Requiring Eventual Prostatectomy
All cases	310	41
Less than 60 cc. residual urine.....	192	33
More than 60 cc. residual urine.....	118	62
Size—Grade I or less.....	136	32
Size—larger than Grade I.....	174	49

should have operation even though the prostate is small and/or the residual urine is less than 60 cc. The bladder muscle may hypertrophy and compensate for the obstruction.

Therefore palliative treatment is usually indicated in most patients who have less than 60 cc. of residual urine and who do not have annoying obstructive symptoms. Prostatic massage at one or two week intervals, and administration of stilbestrol, 1 or 2 milligrams daily, reduces the size of the gland when it is soft and boggy. The patient should not hold the urine very long after he has the desire to void and should avoid becoming chilled. In some patients the drinking of coffee or alcoholic beverages aggravates the symptoms. Frequent catheterization and the passing of sounds is likely to make the patient worse rather than better.

An elderly man with prostatic obstructive disease and in addition some other malady common to the aged, presents a more complicated problem. Heart disease, hypertension, nephrosclerosis and diabetes are frequent coexisting conditions. Most of these diseases will improve sufficiently under treatment to permit prostatic operation to be done successfully. The outlook becomes more gloomy, however, when the complicating lesion is neurogenic. The majority of patients with paralysis agitans, and those who have residual paraplegia from cerebral or cord lesions, are benefited very little by prostatic operation. When they are bedfast most of the time, it is better to treat them by placing an in-dwelling urethral catheter. Following prostatic operation on such patients, it is usually necessary to continue to use an in-dwelling catheter to control incontinence and/or bladder distention due to the central nerve lesion. Even so, prostatic operation may be indicated

in some patients who do not tolerate the in-dwelling catheter. After removal of the gland the catheter is better tolerated. The patient does not notice its presence then, whereas before the operation it may have caused so much irritation and pain that he was unable to stand it.

Indications for Prostatic Operation

Prostatectomy is indicated in most patients who have a residual urine of more than 60 cc. unless the residual is due partially or wholly to a neurological or other lesion. The indication becomes more definite when the prostate is Grade II or larger in size. The exceptions are patients who are too poor surgical risks to stand prostatectomy. Most elderly men who are up and about, who can putter in the garden, and whose spirit is good, tolerate operation well, regardless of adverse objective findings. On the other hand, a man who feels like lying in bed, whose appetite is poor, and who is afraid he will not survive operation, is a poor surgical risk even though the physical examination and laboratory reports are normal.

Approach to Prostatic Operation

When prostatic operation is decided upon, the question often arises as to which approach to prostatectomy is best. The indication for the method by which the prostate is removed is determined more by the training, ability and experience of the surgeon than by any other factor.² The surgeon himself knows better than anyone else which method for him gives the best result. Some surgeons use the transurethral approach for the smaller glands, contractures and bars, and for relief of obstruction due to carcinoma not responding to hormonal therapy. Others use this approach for removal in almost all cases of prostatic obstructive disease, while still others prefer the suprapubic, the retropubic or the perineal approach. Each method gives good results in the majority of cases when the operation is performed properly. The mortality rate is less than 2 per cent, the period of morbidity is short and the end results good. The mortality is a little higher in older patients,⁴ but not enough to contraindicate the procedure unless the patient is a very poor surgical risk.

Prostatic Carcinoma

Carcinoma of the prostate becomes a problem in the aged only after hormonal therapy is no longer effective and in the occasional patient in whom the malignant disease does not respond to this treatment. Orchiectomy combined with small doses of estrogen (stilbestrol, 1 or 2 mg. daily) gives the best results when a positive diagnosis of prostatic carcinoma is made. The malignant lesion melts away and the patient is apparently cured. Estrogens (stilbestrol, 5

mg. three times a day) without orchiectomy is used when there has been no positive microscopic diagnosis of carcinoma. It is dangerous from the medico-legal point of view to remove the testicles unless the diagnosis of malignant disease has been established by positive tests. Urinary obstruction due to carcinoma of the prostate responds to hormonal treatment in the majority of cases. Operation for the relief of the obstruction was necessary in only 8 per cent of cases reported by Mullenix and Prentiss.⁵ After five to ten years of relief the symptoms gradually recur. Backache, weight loss, lassitude and other symptoms do not respond to any treatment except palliative relief of pain.

Vesical Carcinoma

Carcinoma of the bladder, when discovered early in its course, may be controlled for many years. The most common first sign is blood in the urine. This symptom should never be passed over lightly by a physician. Even though the patient is 70 or 80 years old, the source of the bleeding should be determined. A small tumor can be removed by transurethral resection without endangering the patient's life or health. By vigilant follow-up care consisting of cystoscopy every three months, recurrences can be discovered and removed by resection while they are small. However, when the original tumor or recurrences are large when discovered, the treatment is discouraging. It is not possible to do more than a palliative procedure. Radical operation such as cystectomy is not well tolerated and recurrence of neoplasm appears in the subpubic space within a few months.⁵

Vesical Dysfunction

Bladder dysfunction unaccompanied by obstructive prostatic disease is often a real problem in the aged. A lesion of the central nervous system is the most common cause. Patients with cerebral vascular disease, paralysis agitans, with multiple sclerosis and other degenerative diseases of the cord, nearly always have urinary retention or urinary leakage or both. Loss of muscle tone, which so often accompanies old age, may involve the bladder. Senile dementia causes reversion to infant status with resulting uninhibited bladder function.

In rare instances the primary disease may regress with resulting improvement of vesical function. In the majority, however, the lesion is progressive. An in-dwelling urethral catheter, preferably a size 16 or 18 five cc. Foley bag type, is indicated in the majority of aged patients who have urinary retention and/or incontinence due to a central nervous system lesion, to myogenic hypotonia, and to senile dementia. This is especially true when the patient is bed-fast most of the time. The catheter is clamped off

or a small cork inserted into its open end during the day. Allowing the bladder to distend helps prevent contracture and loss of capacity. The patient may also ambulate more easily when the catheter is clamped off. The clamp or cork is removed at three to four hour intervals to evacuate the urine. At night the catheter is connected to a tube draining into a bottle at the side of the bed.

There is no necessity of changing the catheter as long as the urine continues to drain freely through it. In some cases the presence of calcareous deposit, mucus plugs or purulent material hinders drainage. In such cases the catheter should be removed, cleaned and replaced, or a new one used, often enough to assure free flow of urine. Sometimes it is not necessary to change the catheter for two or three months.

Irrigation of the bladder through the catheter once or twice daily with warm 1:5000 solution of potassium permanganate or other mild antiseptic solution helps to keep the catheter open. Some patients do not tolerate an in-dwelling catheter very well; it causes pain, urgency and sometimes bladder spasm and irritation sufficient to result in bleeding. Instillation of a local anesthetic such as mety-caine 1:200 solution into the bladder followed by clamping the catheter off for 30 minutes will relieve the symptoms. This can be repeated as necessary to keep the patient comfortable. Some patients will not tolerate a catheter in any circumstances or will repeatedly pull it out. A rubber or plastic urinal or bag which fits snugly around the penis may solve the problem in some men who have incontinence. Urinary incontinence can be controlled in some elderly women by inserting a 30 cc. Foley bag catheter into the vagina and distending it to the proper size. The pressure of the bag on the urethra may close the canal and thus hold the urine in the bladder. The usual last resort, however, is the use of a large diaper which is changed at frequent intervals. Decubitus ulcers are of frequent occurrence unless the bed is kept dry. The use of an in-dwelling catheter, if at all possible, is by far the best method of managing urinary incontinence.

Sometimes mild bladder dysfunction may benefit from oral administration of drugs. Urecholine (urethane of B-methylcholine chloride, Sharp & Dohme) 10 mg. (two tablets) four times daily or Dibenzylamine (phenoxvbenzamine hydrochloride, Smith, Kline and French) 20 mg. (two capsules) four times daily, increases bladder tone and may help to empty a hypotonic bladder. Dibenzylamine should never be given to patients with congestive heart failure, nor to those in whom a lowering of the blood pressure is undesirable. Partial urinary incontinence without residual urine may be lessened by the oral administration of Probanthine (B-diiso-

propylaminoethyl xanthine carboxylate methobromide, Searle) 15 mg. four times daily. Frequent voluntary exercise of the urethral, perineal and rectal muscles may aid some patients, women especially, to control urinary leakage. Exercise is not as effective in elderly patients as it is in younger ones.

Infections

Urinary tract infections respond to anti-infection drugs in aged patients as well as in younger ones. The presence of organic lesions, especially any that obstruct urinary outflow, may be the cause of persistence or recurrence of infections. Tolerance to the sulfonamides and to antibiotics is less in older people. Persistence or occurrence of fever after the urine is cleared of infection is usually due to reaction from the medication. The drug should be discontinued when the fever persists after the leukocyte content in the blood is below 10,000 per cu. mm., and especially if the urine has cleared. Other evidences of drug intolerance are headache, malaise, gastrointestinal disturbance and skin rash.

Urinary Calculi

Vesical calculi when less than 4 cm. in diameter can be crushed with a lithotrite and the fragments evacuated. Suprapubic cystostomy is necessary for removal of larger stones. In elderly patients renal calculi which cause no symptoms do not need to be removed. Even though there is some infection in the urine, these old people are better let alone unless the calculus in the kidney causes pain. An anticalculus medical regimen consisting of a special diet, aluminum hydroxide, vitamin A, is hardly worthwhile in these patients; it is a change from their fixed habits, is inconvenient and does not do enough good as far as prevention of calculus enlargement is concerned to be worthwhile.

Renal Tumors

Kidney tumors in patients who are more than 80 years old are best let alone. They usually grow slowly and some other disease will probably cause the death of the patient before the tumor begins to cause annoying symptoms. When, however, a renal neoplasm is diagnosed in a patient who is in the

sixties or seventies, nephrectomy is indicated unless the tumor is so large that extension beyond the confines of the kidney is probable, or there is definite evidence of metastasis.

Urological Operation

Present-day advances in surgical technique and in the control of infection makes operation on aged patients much safer than it was 30 years ago. The transurethral approach for removal of bladder and prostatic lesions is ideal for use in the aged. This of course presupposes that the endoscopic procedure is done expertly and adequately. If not expertly done it can cause a great deal of trouble. Lighter anesthesia can be used for endoscopic operations; muscle relaxation is not necessary. Surgical shock occurs less often and is less severe than when an open approach is used. There is much less postoperative pain following transurethral operation and the convalescence is more rapid.

Sometimes the open approach is required for bladder lesions which can not be treated endoscopically, and for kidney or ureteral disease. Accurate and rapid technique, gentleness in handling tissues, the avoidance of trauma and the broad accurate approximation of healing surfaces are all essential to successful operation, especially in aged patients. Long, deep anesthesia should be avoided; preoperative narcosis should be kept to a minimum, and early activity and ambulation after operation are important. When all these conditions are met, urological operations are tolerated very well by aged patients.

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REFERENCES

1. Barnes, R. W., and Heitman, C. E.: Palliative treatment of prostatism, *Calif. Med.*, 70:93-95, Feb. 1949.
2. Barnes, R. W.: Indications for different approaches to prostatectomy, *Calif. Med.*, 73:232, Sept. 1950.
3. Barnes, R. W., Hadley, H. L., Bergman, R. T., and Turner, R.: Conservative versus radical treatment of bladder tumors, *Med. J. Australia*, 1:197, Feb. 12, 1955.
4. Bergman, R. T., Turner, R., Barnes, R. W., and Hadley, Henry L.: Comparative analysis of one thousand consecutive cases of transurethral prostatic resection, *Jour. of Urol.*, 74: 533, Oct. 1955.
5. Mullenix, R. B., and Prentiss, R. J.: Conservative treatment of highly obstructive cancer of the prostate, *Jour. of Urol.*, 65:608, April 1951.